



Clean Water  
C O A L I T I O N

*Solutions for  
Clean Water  
Management*



Clark County  
Water Reclamation  
D I S T R I C T

*The "Clean  
Water Team"*



*A Place To Call Home*



# Systems Conveyance and Operations Program Update to the Lake Mead Water Quality Forum

Douglas Karafa  
Program Administrator

February 15, 2006



Public Participation

Resources

Conservation

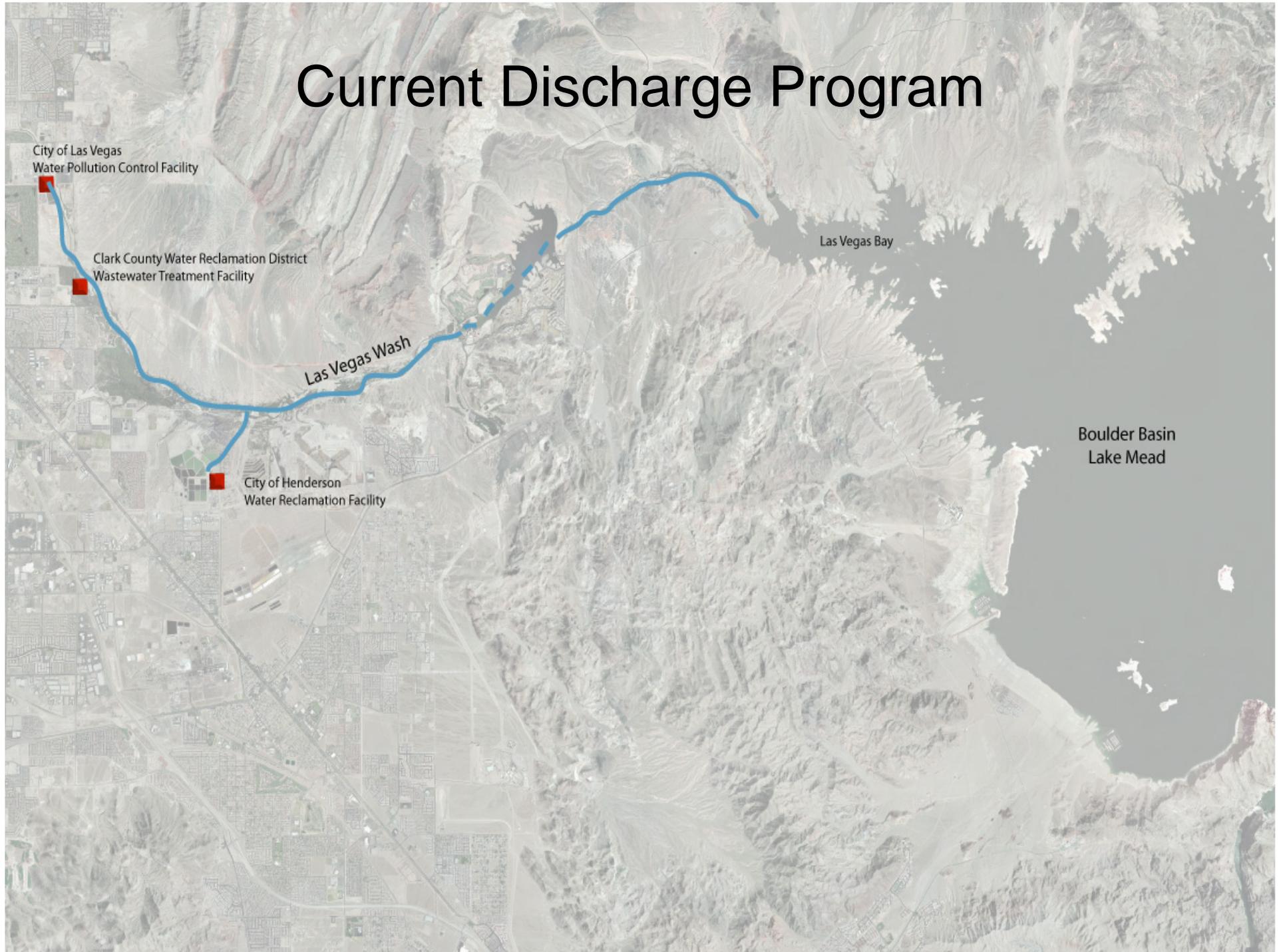
Recreation

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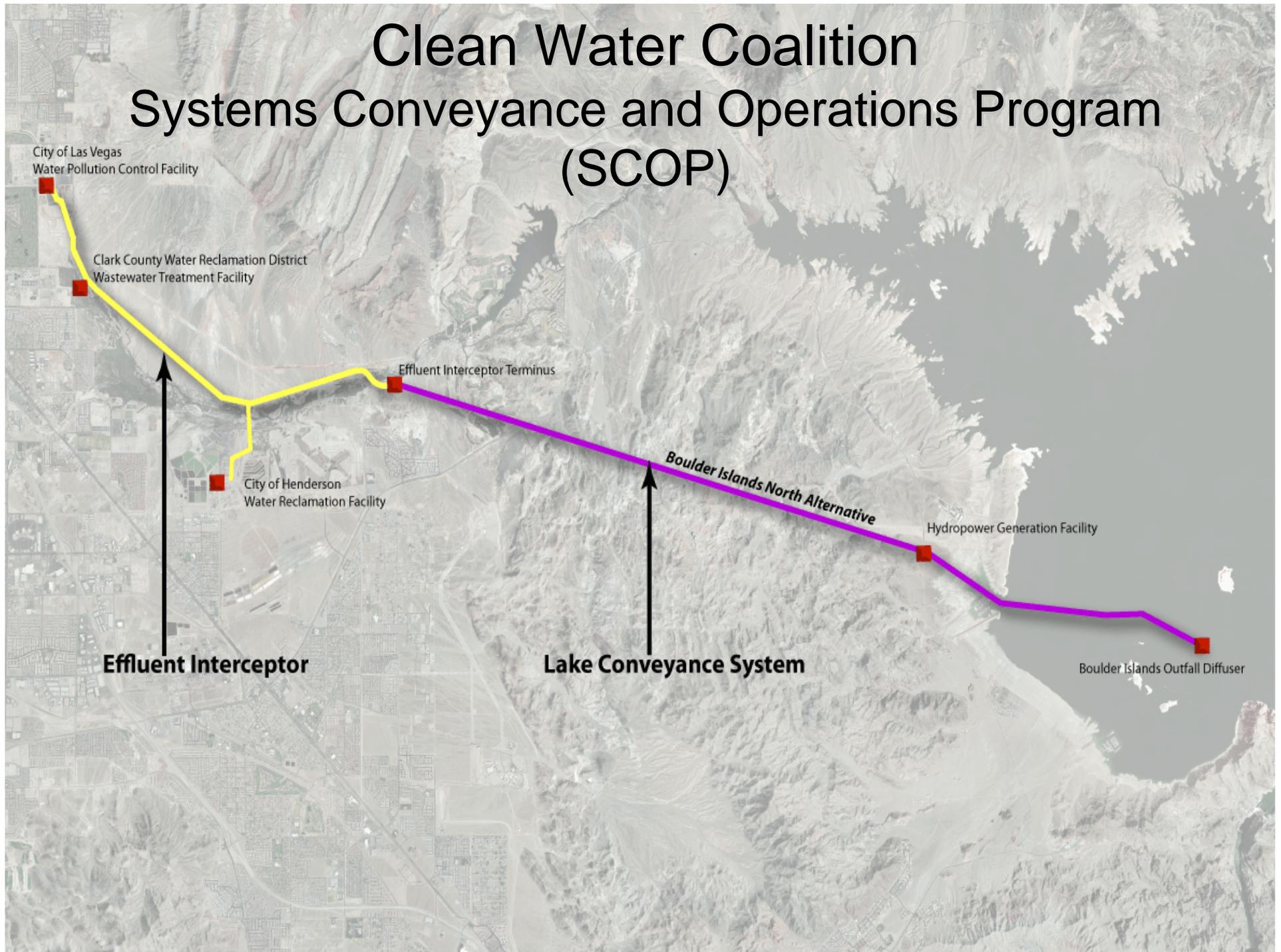
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# Current Discharge Program



# Clean Water Coalition Systems Conveyance and Operations Program (SCOP)



# SCOP Project Drivers

## Flexibility

- Water Quality in the Inner Bay of Las Vegas Bay and Las Vegas Wash
- Relationship of effluent disposal area to drinking water intakes
- Effects of drought and lower lake levels
- Continued protection of return flow credit
- National Park Service recreational values
- Downstream users



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# Wash/Lake Confluence May 4, 2004



# Drought Issues

- Southern Nevada is in the worst drought in recorded history
- The combined capacity of Lake Mead and Lake Powell is currently at less than 50%
- Even with improved conditions, water levels will continue to decline
- Southern Nevada is working with the Basin States to accommodate Lake Mead levels as low as 1000' WSEL



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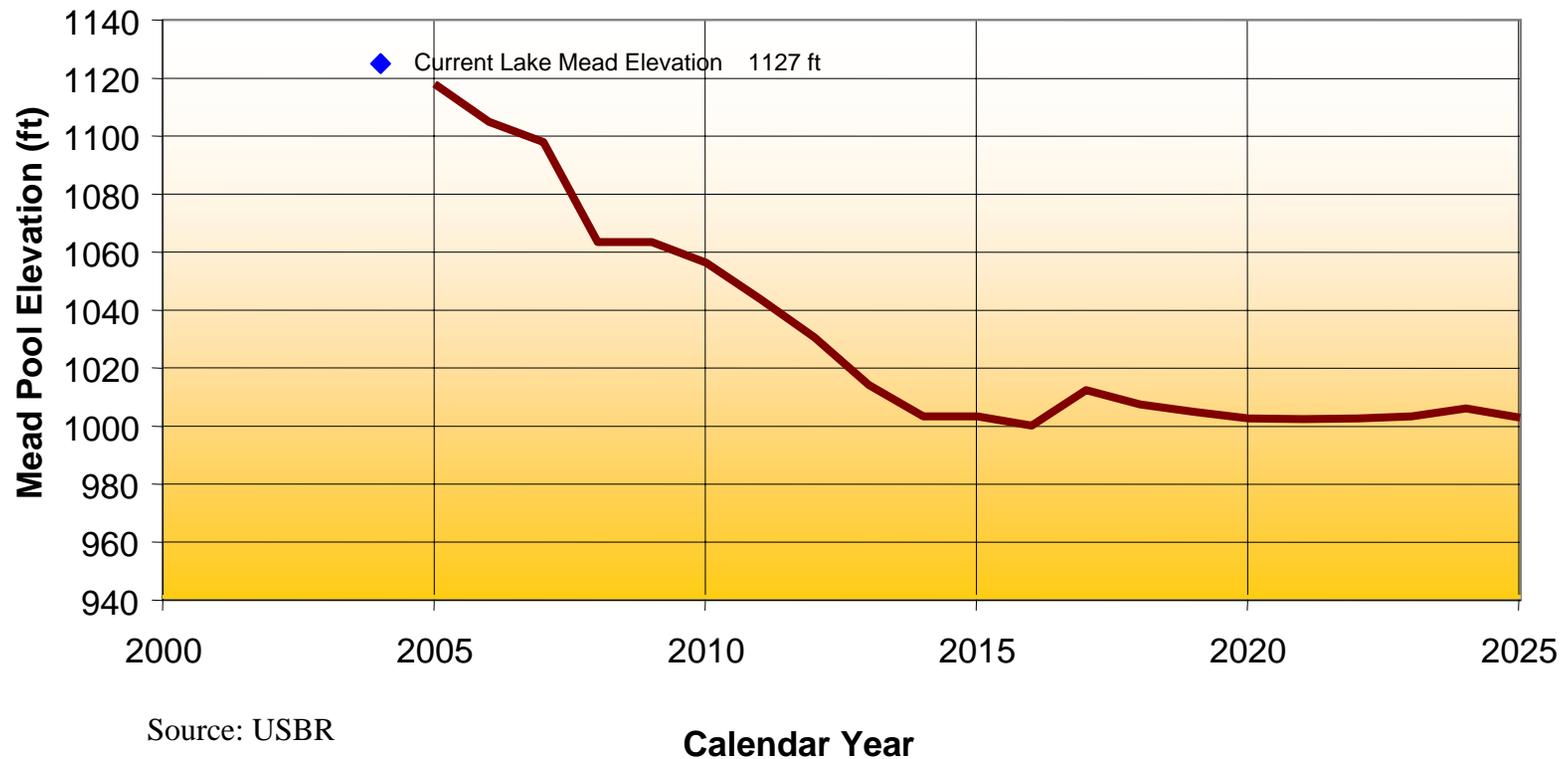
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# Lake Mead End-of-Calendar Year Elevation

Applying 1953 to 1973 runoff pattern to future years



- Assuming Imposition of Mandatory Shortages on Combined Colorado River Water Use to Absolutely Protect a Lake Mead Elevation of 1000 feet. Shortages Could Exceed 1 Million Acre Feet per Year.

# CWC and SNWA Coordinated Efforts

- The drought has had a significant effect on water and wastewater resource issues
  - A new intake is needed to preserve existing capacity and could be needed as soon 2011
  - An alternate discharge point is needed to protect Lake Mead water quality
  - SNWA needs to accelerate the development of in-state non-Colorado River resources in order to meet demands and improve drought tolerance
- Water and wastewater efforts should be coordinated to maximize water quality and use and to minimize financial impacts



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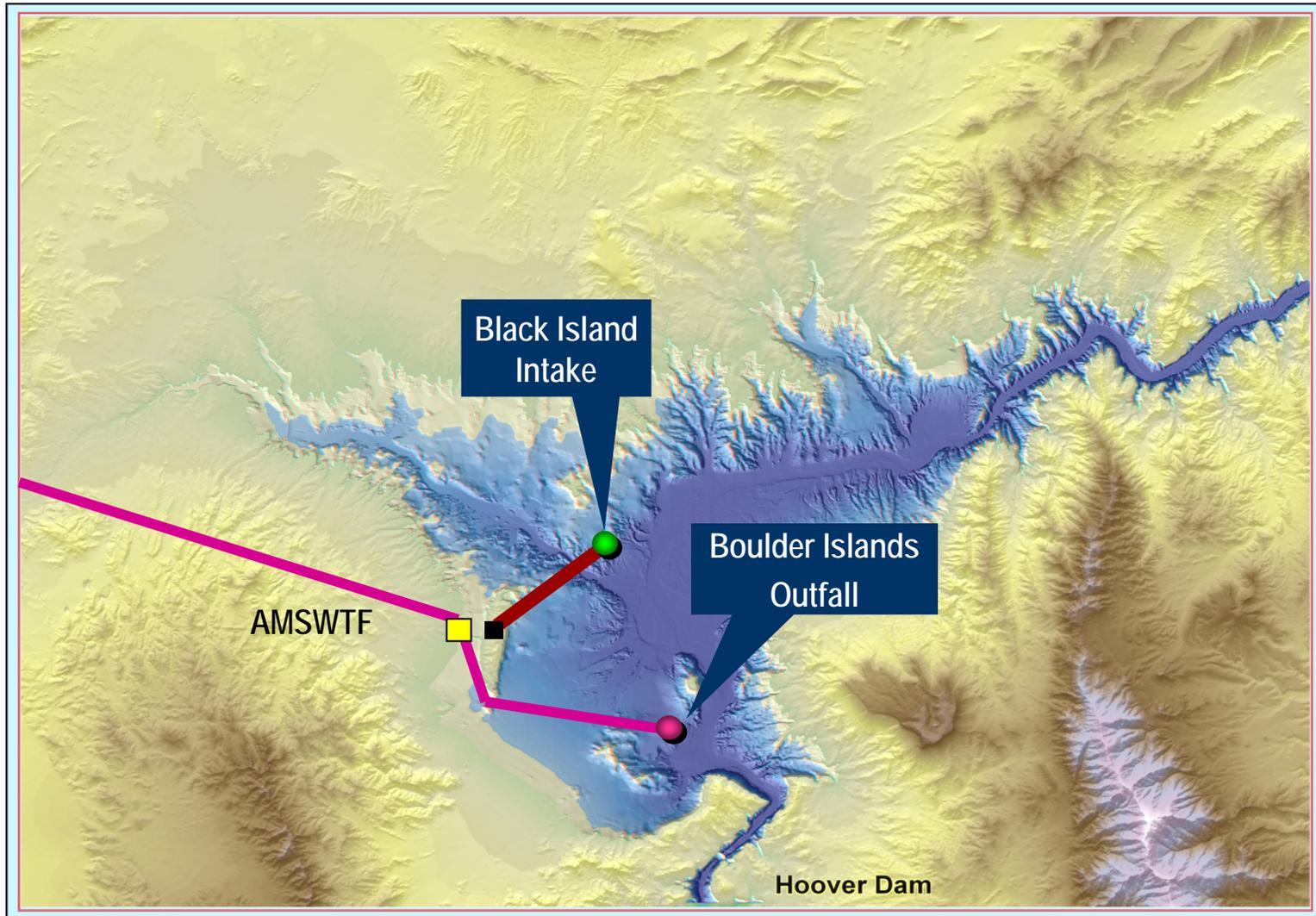
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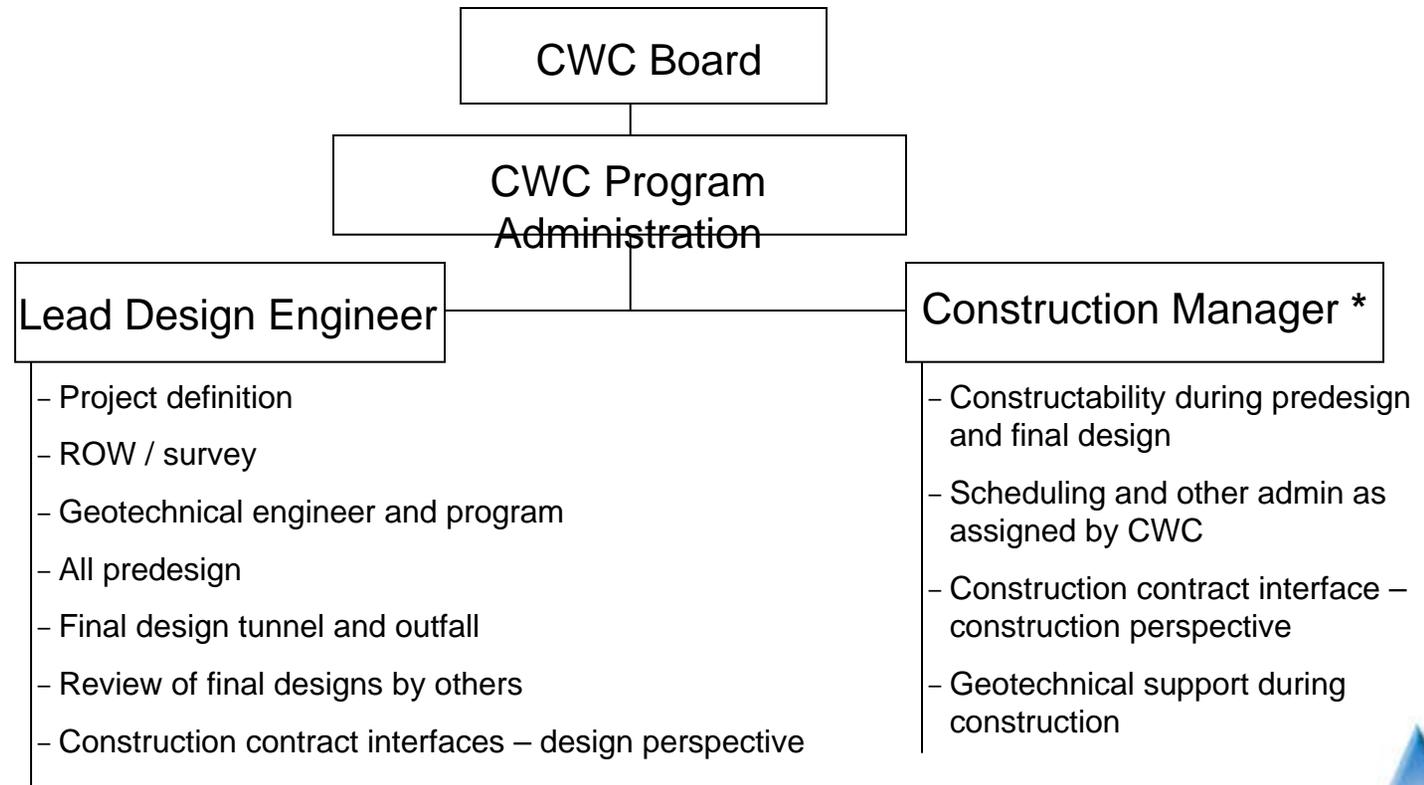
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# Companion Projects



# Core Project Team



**\* Individual team members with “at risk” construction experience on tunnels, outfalls, pump stations, and hydro turbines, along with construction management**



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# Schedule of Key Dates

- Receive Proposals for LDE - Sept. 2005
- Issue RFP for CM Firm - Oct. 27, 2005
- Board Approval LDE - Nov.29, 2005
- CM proposals due 3 PM - Dec. 15, 2005
- CM Shortlist - Jan. 12, 2006
- Board Approval CM - Feb. 16, 2006
- Board - LDE Contract - Mar. 16, 2006
- Board - CM Contract - Apr. 20, 2006
- Final Design RFPs - 2007-2008



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# Environmental Impact Statement

## Co-lead agencies

- National Park Service
- Bureau of Reclamation



## Cooperating Agencies

- Colorado River Commission
- Bureau of Land Management
- Corps of Engineers
- Metropolitan Water District of Southern California

## Other Key Partners

- Clean Water Coalition
- Southern Nevada Water Authority
- US Fish and Wildlife Service
- Nevada Division of Environmental Protection
- U. S. Environmental Protection Agency, Region IX



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# EIS Schedule

- Publish Draft EIS
  - Sept. 30, 2005
- Public Comment period
  - Oct. 7, 2005 to Dec. 23, 2005
- Draft Final EIS
  - April to May 2006
- EIS Record of Decision
  - October to November 2006



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- **Kingman, AZ**
  - Monday, October 24<sup>th</sup> 6:00 p.m., Powerhouse Visitors Center, 120 W. Andy Devine Ave.
- **Tempe, AZ**
  - Tuesday, October 25<sup>th</sup> 6:00 p.m., West Side Multi-Gen Center, 715 W. 5<sup>th</sup> St.
- **Phoenix, AZ**
  - Wednesday, October 26<sup>th</sup> 6:00 p.m., Hilton Suites, 10 E. Thomas Rd.
- **San Diego, CA**
  - Thursday, October 27<sup>th</sup> 6:00 p.m., Sheraton San Diego, 1433 Camino Del Rio South
- **Palm Springs, CA**
  - Friday, October 28<sup>th</sup> 6:00p.m., Hyatt Regency Suites, 285 N. Palm Canyon Drive



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# EIS Commenters

- Approximately 70 Commenters
- Total of 500 individual comments
- 40 Individuals (“I’m Against It”) or (“I like the Do Nothing alternative”)
- 28 Commenters were agencies, municipalities, or others with substantial and reasonable comments
- 2 Commenters in favor of the project (SNWA and Scottsdale, AZ)



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# SCOP Draft EIS Public Comments Issue Categories

- Purpose & Need
- Alternatives
  - Additional alternatives
    - Process Improvements
  - No Action Alternative
- Impacts to Downstream Users
  - Lower Colorado River Multi-species Conservation Program (LCRMSCP)
  - Water Quality
- Impacts to Razorback suckers
  - EDCs and emerging compounds
  - Selenium concentration increases in the Las Vegas Wash



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# DEIS Comments Categories

- Impacts to the Las Vegas Wash from removal of effluent flows
  - Less dilution of other constituents
- Cumulative Impacts
  - Downstream of Hoover Dam (other effluent releases, LCRMSCP, etc.)
- Water Quality
  - Selenium in the Las Vegas Wash
  - EDCs and PPCPs
  - Lake destratification and how it affects water quality
- Adaptive Management Plan



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# Some of the Major Commenters and/or Comments

## Metropolitan Water District of Southern California

- Phosphorus
- Cumulative impacts
- Downstream of Hoover Dam (other effluent releases, LCRMSCP, etc.)
- EDCs and PPCPs
- Adaptive Management Plan



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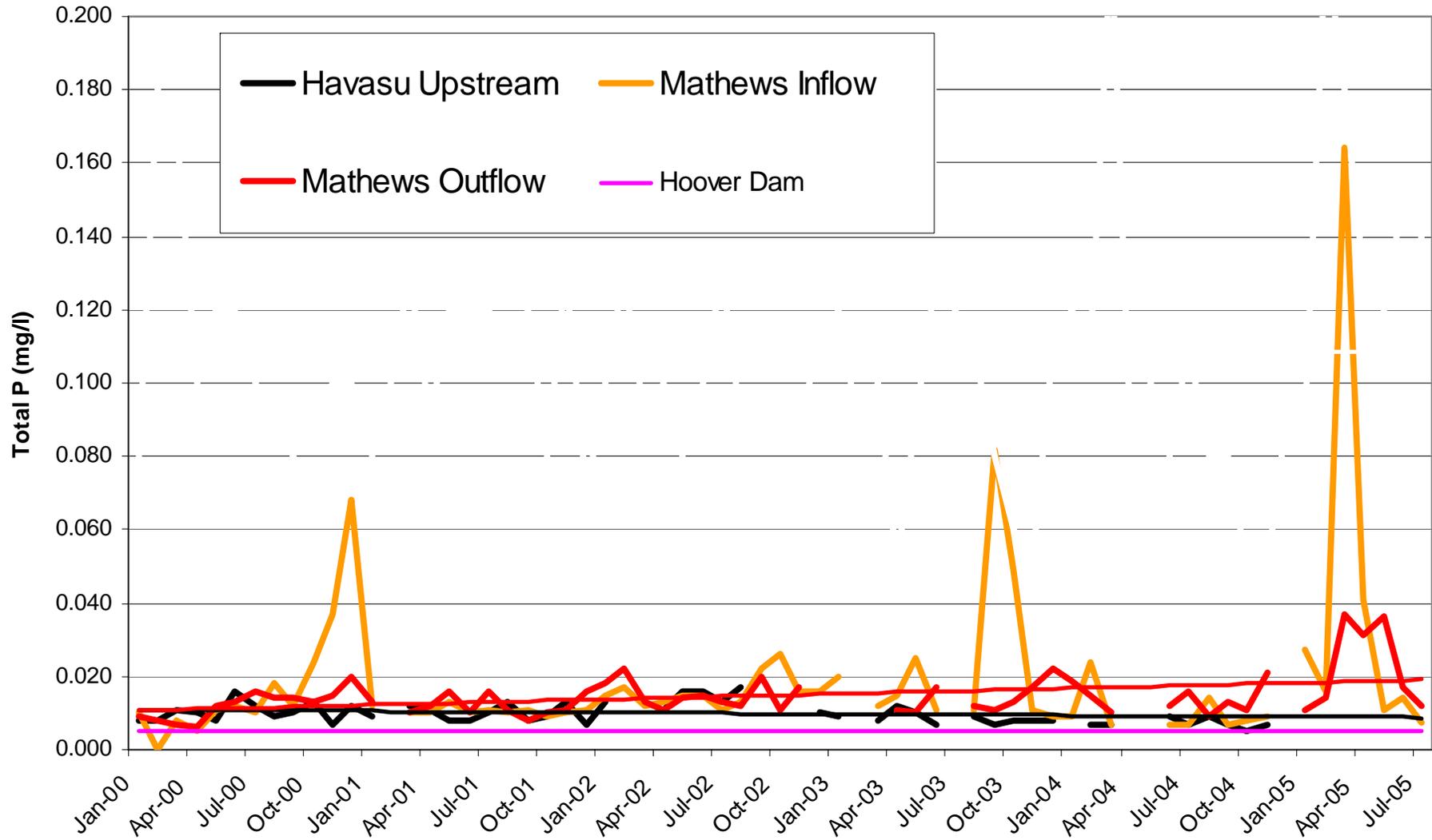
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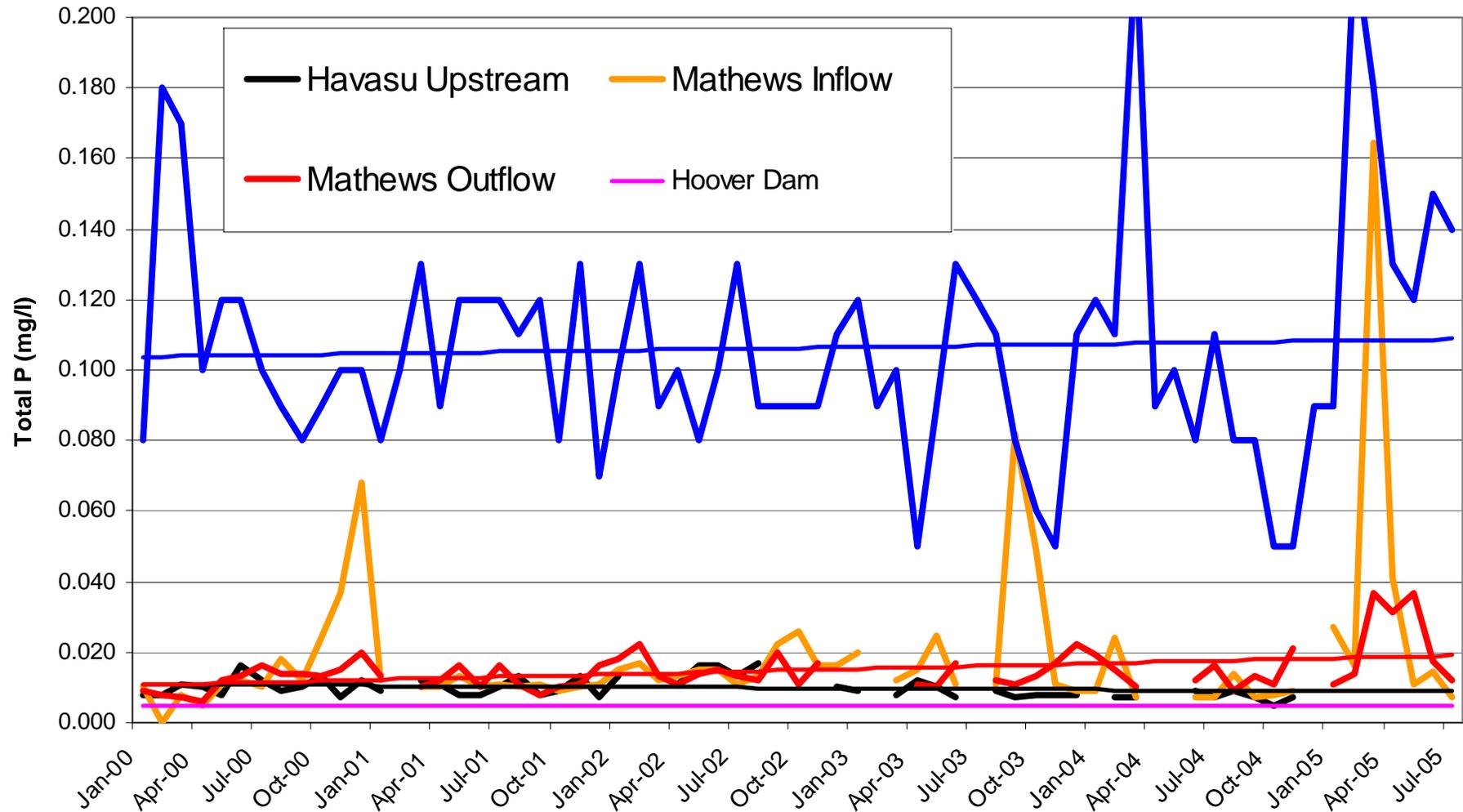
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# Downstream Phosphorus Levels



# SWP Phosphorus Levels



# Some of the Major Commenters and/or Comments

## Arizona, Mohave County

- Downstream Effects
- Most Arizonans did not realize effluent is already being released to the Colorado River
- Citizens in Bullhead City and Lake Havasu City are currently just moving from septic tanks to centralized treatment
- Education process



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# Some of the Major Commenters and/or Comments

EPA, USFWS, NDOW, others

- Las Vegas Wash Effects
- Effects to endangered species, sport fishery
- Effects to terrestrial wildlife during construction
- Endocrine Disruptors
- Meeting Water Quality Standards



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# Endocrine Disruptors and Pharmaceuticals

“A great deal of additional data are needed to understand the relevance of trace EDCs and PPCPs in water and how these compounds may be removed by water treatment. It is important to gain more information as to the toxicological impacts of trace levels of EDCs and PPCPs in water. Once these impacts are quantified, safe exposure limits can be established that will allow the water industry to determine ‘good removal’ rates.”

Pharmaceuticals, Personal Care Products, and Endocrine Disruptors in Water: Implications for the Water Industry”  
Shane A. Snyder, Paul Westerhoff, Yeomin Yoon, and David L. Sedlak



*Environmental Engineering Science*, 2003, p. 461

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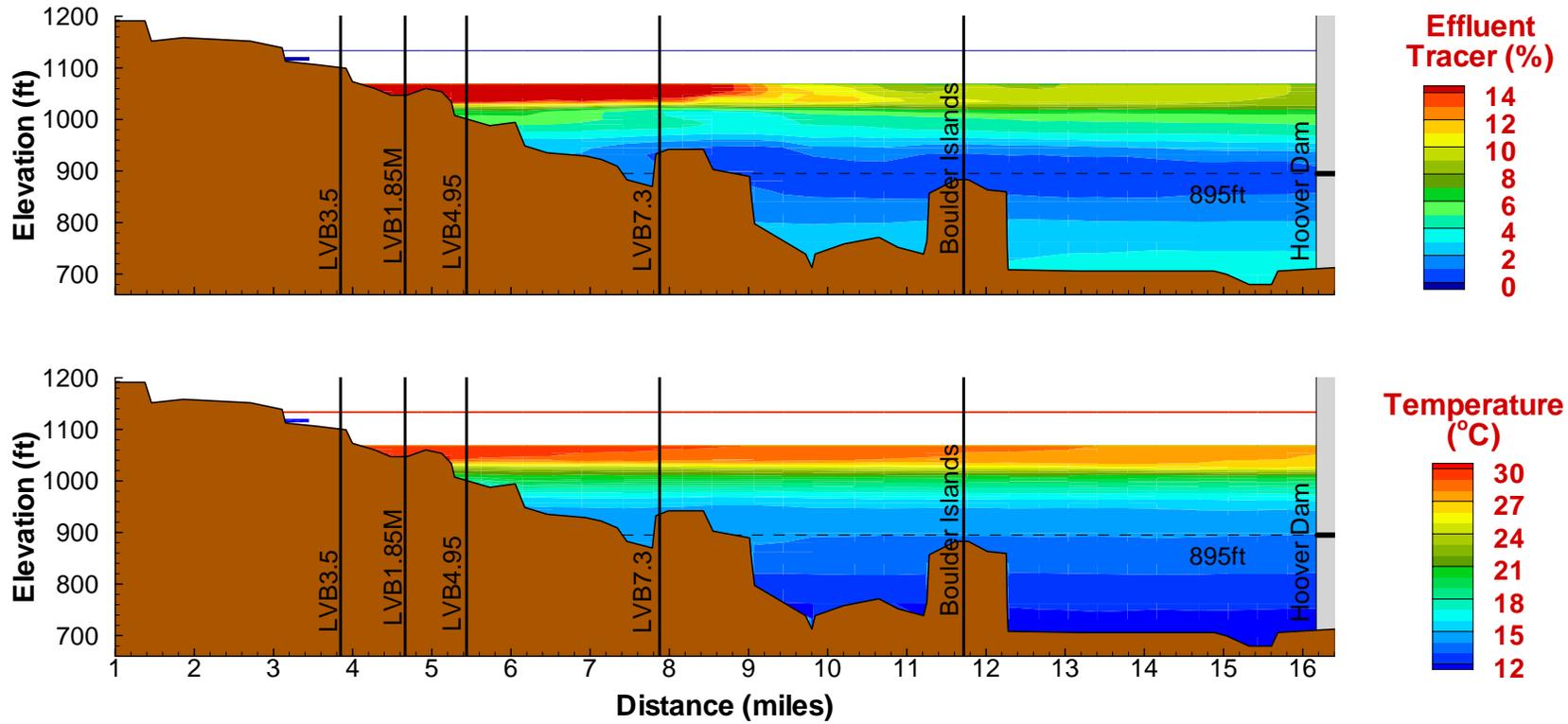
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# 200 MGD at LVW

## September 1

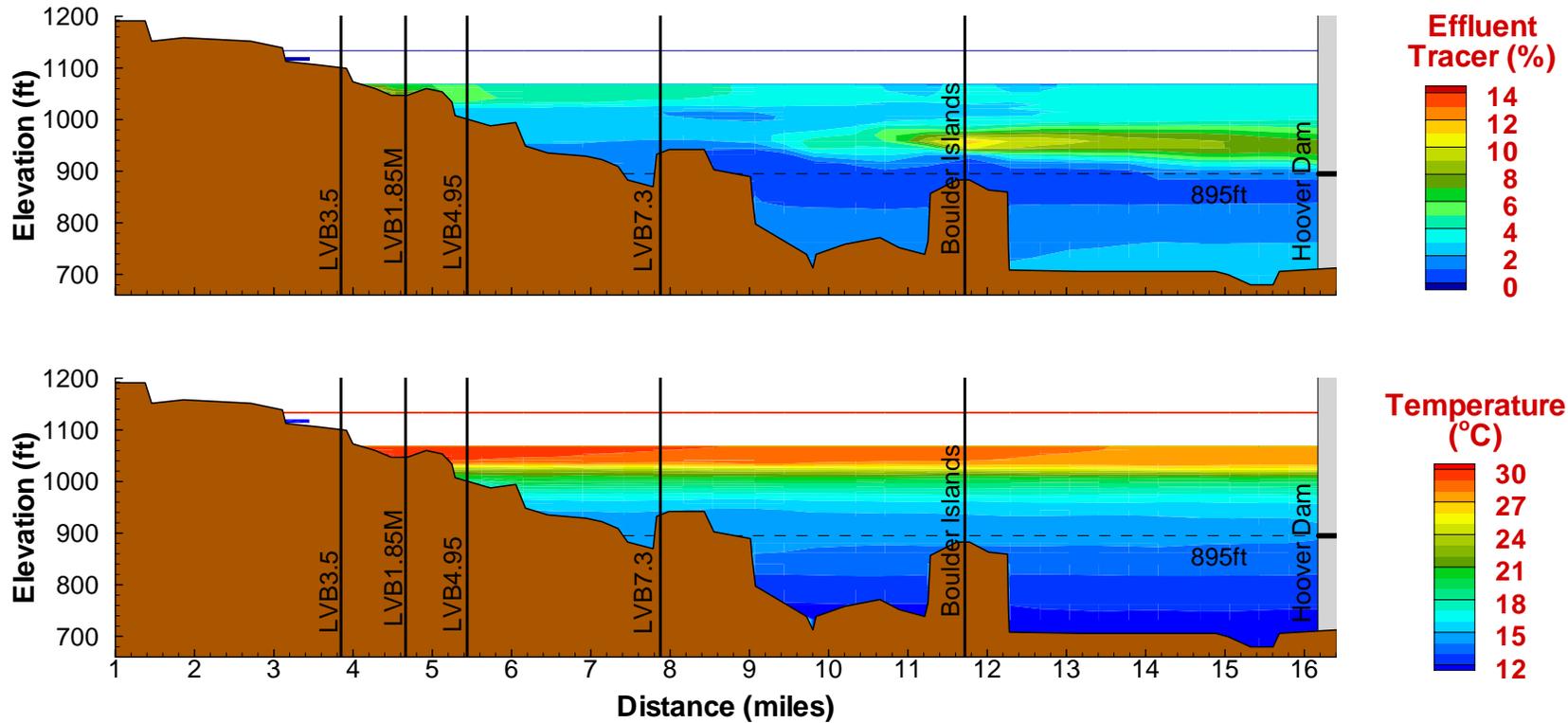
(2002 Meteorology, Initial WSEL = 1,100 ft)



# 270 MGD at BI Diffuser, 30 MGD at LVW

## September 1

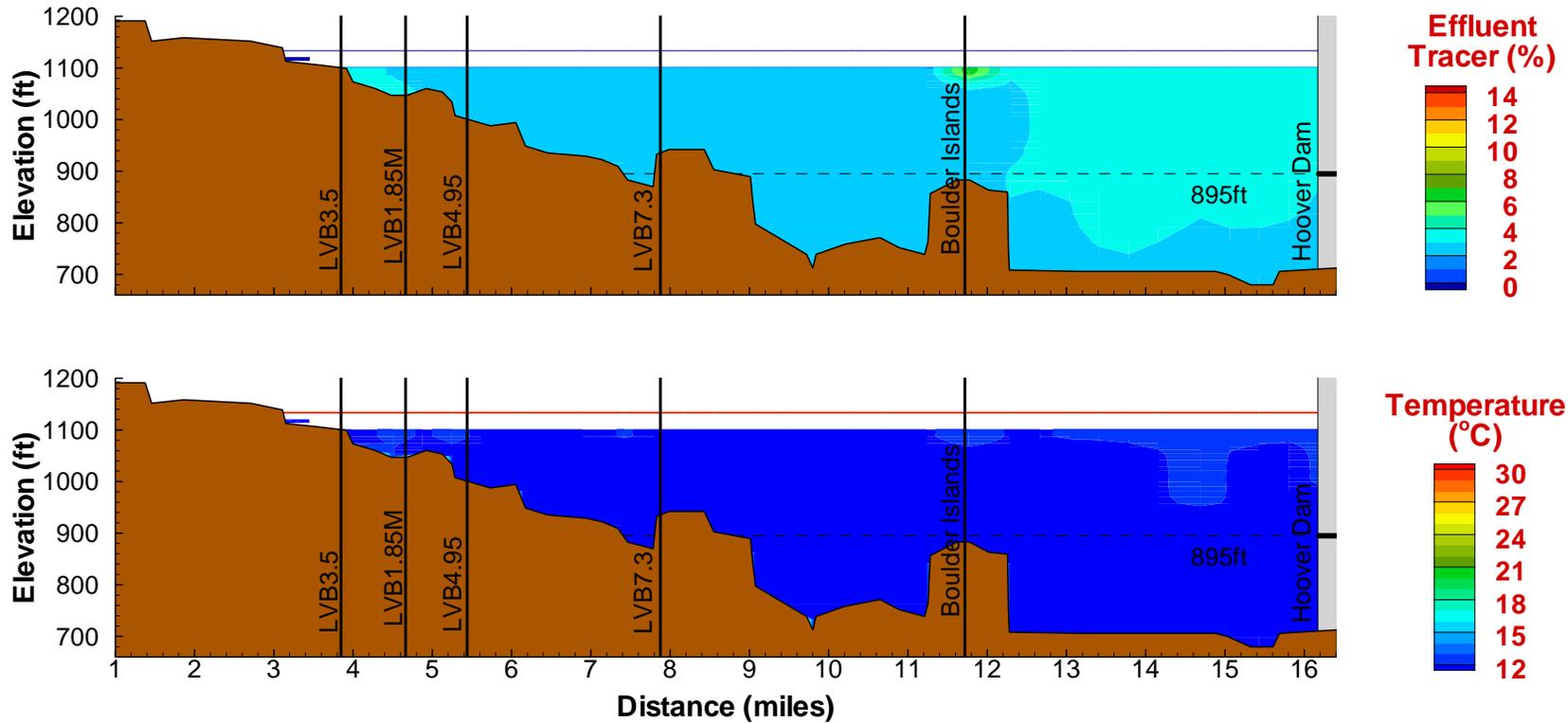
(2002 Meteorology, Initial WSEL = 1,100 ft)



# 270 MGD at BI Diffuser, 30 MGD at LVW

**March 1**

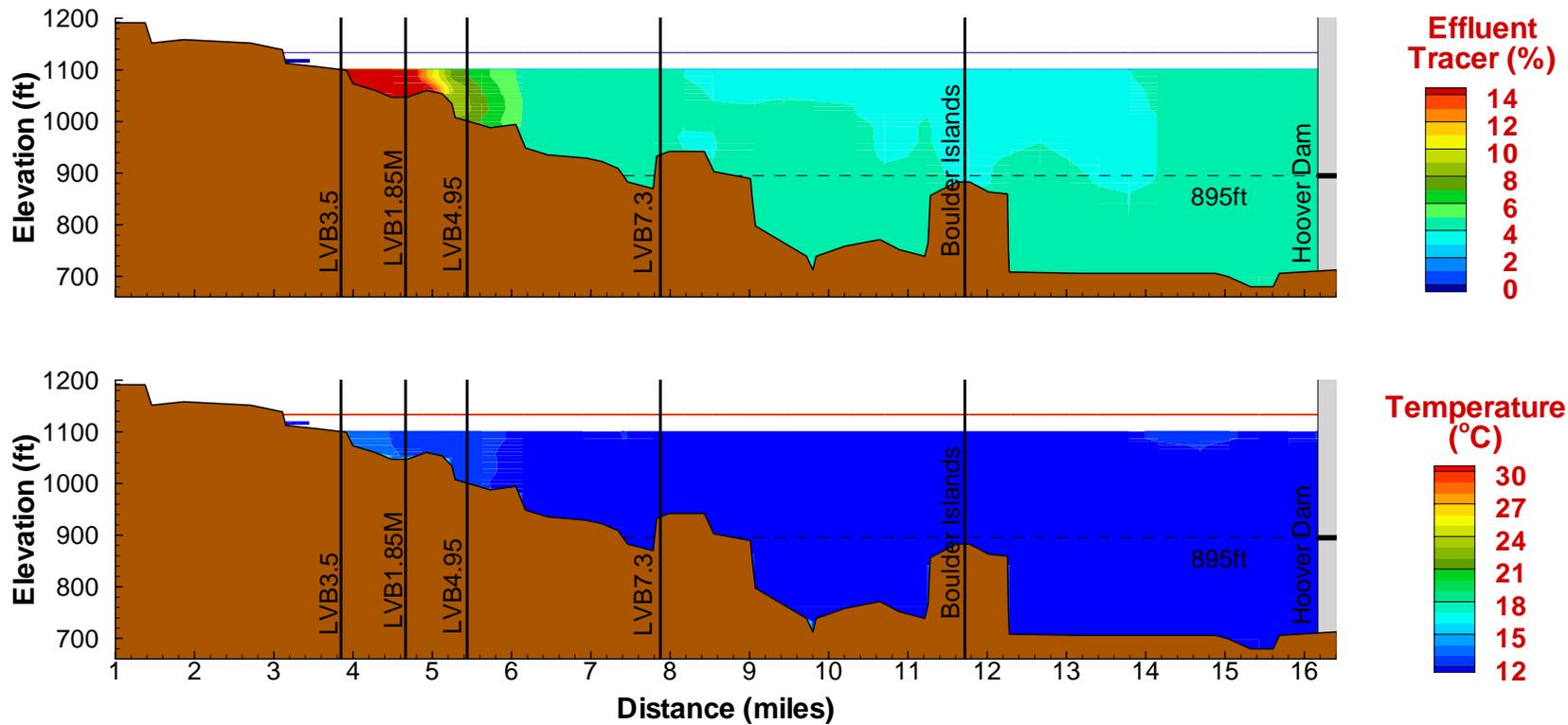
(2002 Meteorology, Initial WSEL = 1,100 ft)



# 200 MGD at LVW

**March 1**

(2002 Meteorology, Initial WSEL = 1,100 ft)





# Adaptive Management Plan

- Core Management & Technical Teams
- Water Quality Monitoring
- Water Quality Modeling
- Establishment of WQ Management Objectives
- Development of Appropriate Responses
- Annual Review and Update



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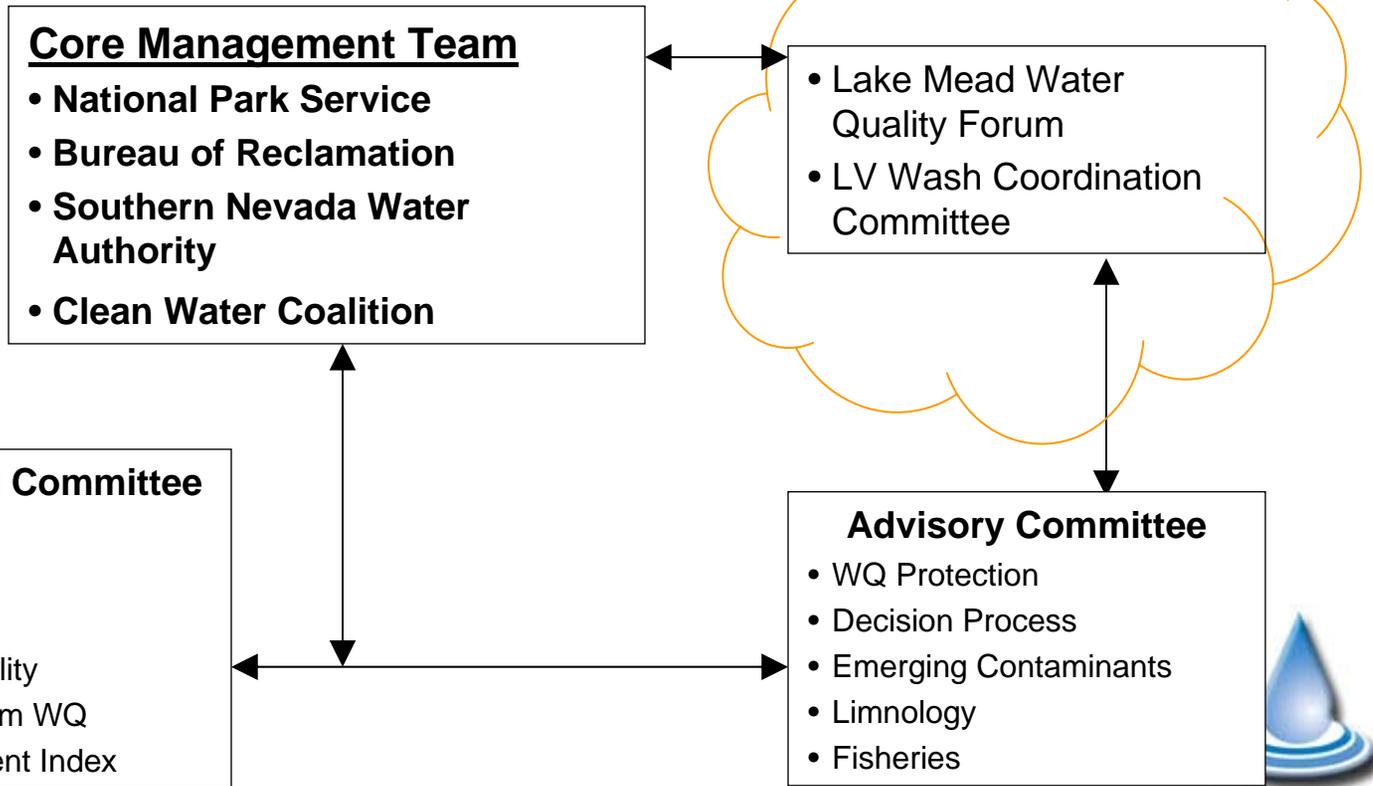
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# Adaptive Management Plan Structure (Proposed)

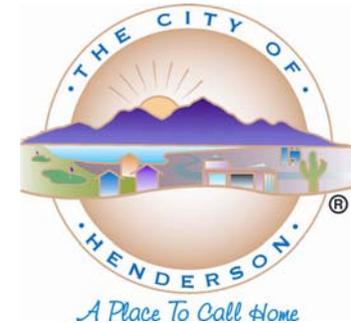




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[www.cleanwatercoalition.com](http://www.cleanwatercoalition.com)

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